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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/673,180 | 09/30/2003 | Toshio Tsujimoto | 243214US0X | 1265 |
| 22850 | 7590 | 04/18/2006 | EXAMINER | |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | | SONG, MATTHEW J |
| ART UNIT | | PAPER NUMBER | | |
| | | 1722 | | |

DATE MAILED: 04/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|-----------------------------|------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/673,180 | TSUJIMOTO ET AL. |
| | Examiner Matthew J. Song | Art Unit 1722 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 21 March 2006.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 16-26 is/are pending in the application.
 4a) Of the above claim(s) 24-26 is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 16-23 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Newly submitted claims 24-26 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claims 24-26 are product claimed, which as claimed can be produced by another materially different process, such as one where the silica powder is not sintered.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 24-26 withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

2. This application contains claims 24-26 drawn to an invention nonelected with traverse in the paper filed on 10/28/2005 complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 16-18 and 20-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Schwertfeger et al (US 6,946,030).

In a method of producing a crystalline silica glass crucible, note entire reference, Schwertfeger et al discloses a silica glass crucible comprising a porous amorphous silica glass green body (Abstract) and crystallizing regions in the silica glass crucible (col 4, ln 45-60 and claim 18), this reads on applicant's crystalline quartz.

Referring to claim 17, Schwertfeger et al discloses crystallizing the porous amorphous silica green body; therefore the crystallized layer is inherently porous.

Referring to claim 18, claim 18 further limits claim 16 by adding process limitations; therefore is a product-by-process claim. The patentability determination of a product-by-process claim is based on the patentability of the product and does not depend on its method of production (MPEP 2113).

Referring to claim 20, Schwertfeger et al discloses a crucible (Abstract).

Referring to claim 21-22, Schwertfeger et al discloses a crystallized layer on the inside and outside (claim 17).

Referring to claim 23, Schwertfeger et al does not disclose a ring configuration. However, this feature is inherent because crucibles are round in shape; therefore forming a crystallization layer on a round body will necessarily form a ring shape.

5. Claims 16-18 and 20-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Loxley et al (US 5,053,359).

In an method of forming a silica glass crucible, note entire reference, Loxley et al discloses converting a silica crucible from an amorphous state to a crystalline state by heating the glass for a short time (col 5, ln 50-67). Loxley et al discloses converting 90% of the silica to crystalline silica, this reads on applicant's crystalline quartz because quartz is crystalline silica, in 2-4 hrs (col 12, ln 50-60 and col 16, ln 45-55).

Referring to claim 17, Loxley et al disclose sintering provide some porosity (col 5, ln 40-50); therefore the crystallized layer is inherently porous.

Referring to claim 18, claim 18 further limits claim 16 by adding process limitations; therefore is a product-by-process claim. The patentability determination of a product-by-process claim is based on the patentability of the product and does not depend on its method of production (MPEP 2113).

Referring to claim 20, Loxley discloses a crucible (abstract).

Referring to claims 21-22, Loxley discloses crystallizing 90% of the amorphous silica (col 12, ln 50-60); therefore the crystalline layer is inherently formed on the inside and outside of the crucible.

Referring to claim 23, Loxley et al does not disclose a ring configuration. However, this feature is inherent because crucibles are round in shape; therefore forming a crystallization layer on a round body will necessarily form a ring shape.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schwertfeger et al (US 6,946,030) or Loxley et al (US 5,053,359) as applied to claims 16-18 and 20-23 above, and further in view of Loxley et al (US 5,389,582).

Schwertfeger et al and Loxley et al ('359) teaches all of the limitations of claim 19, as discussed previously, except the claimed particle size of the silica powder.

In a method of forming quartz crucible using quartz powders, note entire reference, Loxley et al teaches using micronized particles of less than 10 microns of silica to produce reliable CZ crucibles of transparent bubble-free quartz glass which can readily be converted to cristobalite. (col 3, ln 1-65). It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Schwertfeger et al or Loxley et al ('359) by using a silica powder consisting entirely of silica particles of less than 10 microns, as taught by Loxley ('582),

to produce reliable and useful CZ crucibles of transparent bubble-free quartz glass which can readily be converted to cristobalite.

Response to Arguments

8. Applicant's arguments with respect to claims 16-23 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Song whose telephone number is 571-272-1468. The examiner can normally be reached on M-F 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Matthew J Song
Examiner
Art Unit 1722


YOGENDRA N. GUPTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

MJS
April 6, 2006